

REMARKS

The claims now pending in the Application are allowed claims 39-40, 42, 46-49, 51-60, and 115 through 117. A substitute Abstract of the Disclosure has been provided that is less than 150 words and less than 25 lines in length. A copy of the substitute Abstract of the Disclosure on a separate paper is attached hereto. In addition, the status of the applications to which the Applicants claim priority has been updated. The specification has been amended to correct the various objections set-forth on pages 2-3 of the April 19, 2002 Official Action.

By way of a separate paper, Applicants have filed a Request For Approval to Amend the Drawings. Specifically, the Request seeks to fix certain errors that are contained in Fig. 10. No new matter has been added.

In light of the amendments made herein, Applicants submit that the Application is in condition for allowance. A Notice of Allowability is respectfully requested.

Respectfully submitted,

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Dated: June 5, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT

Delete the abstract on page 38, line 2 to line 26 and insert the following:

--An electronic device for performing biological operations includes a support substrate, an array of microlocations disposed on the substrate, the array being formed within a region. A first collection electrode is disposed on the substrate adjacent to the array. A second collection electrode is disposed on the substrate adjacent to the array and at least in part on the opposite side of the region. A method for analysis of a biological sample using the electronic device includes the steps of providing the sample to the device, placing the first collection electrode attractive for desired charge biological materials, thereby concentrating charged biological materials on the collection electrode. The second collection electrode is placed attractive relative to the first collection electrode, thereby transporting biological materials from the first collection electrode towards the second collection electrode and over at least a portion of the array of microlocations.--

IN THE SPECIFICATION

On page 1, line 14, please delete the paragraph beginning with "This" and ending in "herein" and insert the following replacement paragraph"

--This application is a continuation of Application Serial No. 09/026,618, filed February 20, 1998 now issued as U.S. Patent No. 6,099,803, which is a continuation-in-part application of Application Serial No. 08/753,962, filed December 4, 1996, entitled

"Laminated Assembly for Active Bioelectronic Devices" now issued as U.S. Patent No. 6,287,517, which is a continuation-in-part of Serial No. 08/534,454, filed September 27, 1995, entitled "Apparatus and Methods for Active Programmable Matrix Devices" now issued as U.S. Patent No. 5,849,486, which is a continuation-in-part of Application Serial No. 08/304,657, filed September 9, 1994, entitled, as amended, "Molecular Biological Diagnostic Systems Including Electrodes", now issued as U.S. Patent No. 5,632,957, continued as Serial No. 08/859,644, which is a continuation-in-part of Application Serial No. 08/271,882, filed July 7, 1994, entitled, as amended, "Methods for Electronic Stringency Control for Molecular Biological Analysis and Diagnostics", now ~~allowed~~ issued as U.S. Patent No. 6,017,696, which is a continuation-in-part of Application Serial No. 08/146,504, filed November 1, 1993, entitled, as amended, "Active Programmable Electronic Devices for Molecular Biological Analysis and Diagnostics", now issued as U.S. Patent No. 5,605,662, continued as Application Serial No. 08/725,976, entitled "Methods for Electronic Synthesis of Polymers" now issued as U.S. Patent No. 5,929,208 and Application Serial No. 08/709,358, filed September 6, 1996, entitled "Apparatus and Methods for Active Biological Sample Preparation" now issued as U.S. Patent No. 6,129,828, and is related to Application Serial No. 08/846,876, filed May 1, 1997, entitled "Scanning Optical Detection System" now issued as U.S. Patent No. 6,309,601, all incorporated herein by reference as if fully set forth herein.--

Please replace the sentence beginning on page 13, line 29 with the following:

--Figs. 5A, 5B, and 5C show perspective views of the bottom and top and via (in top

view), respectively, of a flip-chip system.—

Please replace the sentence beginning on page 14, line 1 with the following:

--Fig. 6A is a cross-sectional view of a flip-chip system showing an inlet port and sample chamber.

Fig. 6B is a top view of the flip-chip system shown in Fig. 6A.

Fig. 6C is a side view of the flip-chip system shown in Fig. 6A.

Fig. 6D is an enlarged detail view of the inlet port shown in Fig. 6A.

Fig. 6E is a side view showing a flip-chip system having multiple flip-chips.--

Please replace the paragraph starting on page 16, line 24 beginning with the word “One” and ending on page 17, line 11 with the following:

-- One field-shaping protocol is as follows:

<u>Negative Bias</u>	<u>Positive Bias</u>	<u>Current</u>	<u>Bias Time</u>
Counter Electrode 26	1st Collection Electrode 20	75	30 sec.
Focusing Electrode 26 (-0.2) 1st Collection Electrode 20	1st Transport Electrode 30	25	90 sec.
Focusing Electrode 26 (-0.2) 1st Transport Electrode 30	2nd Transport Electrode 32	5	180 sec.
Focusing Electrode 26 (-0.2) 1st Transport Electrode 30 2nd Transport Electrode 32	3rd Transport Electrode 34	3	420 sec.

Focusing Electrode 26 (-0.2)	Row 3	1.5	120 sec.
2nd Transport Electrode 32		(500n/pad)	
3rd Transport Electrode 34			
Focusing Electrode 26 (-0.2)	Row 2	1.5	120 sec.
2nd Transport Electrode 32		(500n/pad)	
3rd Transport Electrode 34			
Focusing Electrode 26 (-0.2)	Row 1	1.5	120 sec.
2nd Transport Electrode 32		(500n/pad)	
3rd Transport Electrode 34--			

Please replace the paragraph beginning on page 18, line 15 with the following:

-- Figs. 5A, 5B and 5C show perspective views of the bottom and top and via 409
108 in top view, respectively, of a flip-chip system. A device 80 includes a support
substrate 82 having a first surface 84 and a second surface 86, which may be of materials
suitable for the function of support and conduction, such as flex circuitry, printed circuit
board or semiconductive material. Contacts 88 lead to traces 90, which lead to the second
substrate 92. Contacts, such as bump contacts, e.g., solder bumps, indium solder bumps,
conductive polymers, silver filled epoxy, provide electrical contact between traces 90 and
the chip or substrate 92. A sealant is disposed between the second surface 86 of the
support substrate 82 and the first surface 94 of the second substrate 92. An inlet port 100
may be in conductive relation to a sample chamber 102, which yet further leads to the
assay chamber 104, and on to the outlet port 106. Fig. 5C shows a perspective view of the

support 82 and the via 108 formed through it. The second substrate 92 is shown in dashed lines, which is disposed below the substrate 82 in the view of Fig. 5C.--